Guidelines for the 2nd ILC Workshop at Snowmass

General Goals

The ILC GDE plans to develop a formal ILC Baseline Configuration Document (BCD) by the end of calendar 2005. The 2nd ILC Workshop should be used to begin this process. The ILC BCD is a working document that describes the accelerator and specifies the configuration – it differs from a CDR in that it is not as descriptive and does not contain the site, cost, or schedule information. The Working Groups must work to agree upon the configuration of a large fraction of the collider design before and during the Workshop. They should use the Workshop to develop paths to working decisions for the remaining critical issues with the expectation that these could be decided at one or two subsequent meetings during the fall of 2005. The Workshop should also be used to start the initial documentation of the BCD. Finally, the Working Groups should identify critical R&D topics and timescales for alternative solutions to the ILC Baseline Configuration that could have a significant impact on the performance or cost of the linear collider. A schematic of the BCD development is shown in Figure 1.

Structure of the Snowmass Workshop

The second ILC Workshop will be held in Snowmass in parallel with the ALCPG workshop. The web site can be found at http://alcpg2005.colorado.edu.

The ALCPG foresees a full two-week Snowmass workshop from 14-27th August. The current suggestion for the 2nd ILC Workshop is to also make use of the full two-weeks. However, due to various conflicts, it is likely that many people would only be able to attend a part of the workshop. To address this, we propose the following solution:

1. The first week has a 5 day formal ILC Workshop with the same general format as the KEK meeting. The primary goal of each Working Group would be the presentation of decisions towards a BCD and the identification of outstanding critical decisions that will be required to reach a formal Baseline by the end of 2005. The Working Groups would also identify critical R&D that could have a significant impact on the performance or cost of the linear collider. We are anticipating that more than 200 people will attend this first week of the Workshop.

2. During the second week, the Working Groups would continue to develop and document the details of the Baseline Configuration that was agreed upon during the formal Workshop. The Working Groups would also refine the paths to resolving the outstanding decisions needed to fully define the Baseline Configuration and would more fully develop the R&D program for the alternative solutions to the Baseline Configuration with R&D costs and timescales. The Working Group convenors need to identify key people early to ensure that sufficient representation will remain at the full Workshop to complete these goals however the expected attendance is less than that of the

first week. A list of key people for the second week should be generated and distributed by the respective Working Group conveners before the 1st convener video meeting on April 27th – discussed below.

The details of the formal workshop will need to be discussed by the GDE Director, the ILC Working Group Coordinating Committee, and the ILC Workshop Programme Committee together with the Working Group Conveners. A tentative schedule for the Workshop follows where Working Groups refers to the ILC Accelerator Working Groups and there would be daily coffee breaks from 9:30 – 10:00am and 3:30 – 4:00pm:

Monday (8/15): Plenary with ALCPG
8:30 – 12:00 Physics and Detector Plenaries
13:30 – 17:30 ILC Working Group Plenaries

Tuesday – Thursday (8/16-18): Working groups
8:30 – 9:30 Preview of daily plans
10:00 – 12:00 Working groups
12:00 – 13:30 Seminar
13:30 – 17:30 Working groups

Friday (8/19): Summaries
8:30 – 12:00 preparation
12:00 – 13:30 seminar
13:30 – 17:30 Working Group Configuration Summaries
(6 groups, 30 + 5 minutes each)

Saturday (8/20): Working groups
8:30 – 12:00 preparation for Week 2
18:30 – 24:00 LC 40th Birthday Party

Monday – Thursday (8/22-25): Working groups
Same format as previous week

Friday (8/26): Workshop Summary
8:30 – 12:00 Physics and Detector Summaries
13:00 – 15:00 Working Group Summaries (5 groups, 20 + 4 minutes each)

Guidelines for the ILC Working Groups

With the primary goal of defining much of an ILC Baseline Configuration and R&D Plan, much of the success of the 2nd ILC Workshop will depend on a large amount of preparatory work that needs to be done within the WGs before the workshop. The Working Group convenors should begin discussing possible methods of converging on a Baseline Configuration. In addition, they should distribute an outline of the decisions and the supporting work that will be needed to converge upon the BCD – much of this work has already been completed by the different groups. These outlines should be posted on the web by the end of April 2005 with an associated discussion board to facilitate communication. Until a formal choice for the ILC web site is chosen, the convenors of each working group should specify a location for their

website however we would suggest using the discussion boards at: http://forum.linearcollider.org; a separate board has been created for each of the five working groups – additional sub-structure can be added. The location of the respective Working Group web sites should be mailed to mieke@interactions.org. In addition, we would like to start a monthly convenors video-conference with the first meeting to be held on April 27th at 10pm in Japan, 6am PDT, 9am EDT, 3pm CET – dates for the other meetings will be distributed shortly. Finally, wherever possible, work that will be supporting the choices in the Baseline Configuration should be documented in written form and posted to the respective websites.

The ILC Snowmass Working Groups

At the ILCSC meeting directly after the KEK Workshop, it was decided to keep the Working Group structure and the associated conveners as an interim and temporary structure running to, at least, the Snowmass workshop. While this is accepted, it may now be prudent to review the remit of each working group and streamline the "boundaries" between them in view of the goals of the workshop. In particular, during the KEK workshop, WG1 identified some key areas and proposed the formation of focus groups whose goals would be to attempt to quantify the issues involved. Since the KEK workshop some other key topics have been identified. Each of these topics requires a specialist group and possibly a *coordinating person*.

Since such structures will ultimately be defined by the emerging GDE, we do not propose the formation of new working groups or task forces, but rather to identify sub-tasks within the existing working group packages. It would then be the job of the relevant Working Group conveners, with agreement of the Program Committee, to identify a possible coordinating person responsible for that task. Table 1 lists possible sub-tasks for the current working groups.

The Snowmass ILC Machine Seminars

It has been proposed that an "accelerator school" focused on ILC machine issues be organised to run concurrently with the entire two-week workshop. The subject has been informally discussed by several people. The consensus seems that a full-blown school with the level detail offered by USPAS or CAS would be too much work for people who almost certainly would be critical to the primary goals of the workshop. However, it was also felt that advantage should be taken of the potentially large interest in the machine physics from the HEP community attending the parallel physics workshop. With this in mind it has been suggested that a series of eight seminars could be arranged for each day (not including the first or last days). Each seminar would be 60 minutes (+30 minutes discussion) long, and would focus on a specific topic or sub-system of the machine. The level of the presentation should be general enough to appeal to a more general (non-accelerator physicist) audience. A small sub-group of the Programme Committee could be charged with organising the seminar series. The eight lecturers will need to be identified early so that they have time to prepare the seminars. An advantageous time slot each day must also be agreed upon with the ALCPG organisers; the present time slot that has been suggested is from 12:00 – 1:30 pm.

Table 1. ILC Working Groups, Convenors, and Topics

WG1: Parameters Kiyoshi Kubo Tor Raubenheimer Daniel Schulte	Beam parameters Beam dynamics Diagnostics Reliability & operations
WG2: Linac Design Chris Adolphsen Terry Garvey Hitoshi Hayano	Linac optimization Beam interface (quads, BPMs, …) Cryo-systems RF Sources Low-level RF
WG3: Injectors Gerry Dugan Susanne Guiducci Masao Kuriki	Electron sources Positron source Damping rings Bunch compressors
WG4: Beam Delivery Grahame Blair Tomoyuki Sanuki Andrei Seryi	Beam delivery design Machine Detector Interface Beam collimation Beam dumps
WG5: Cavities Helen Edwards Dieter Proch Kenji Saito	High Gradient R&D Materials R&D Input couplers Cavity Tuners (fast and slow) Cavity Fabrication Issues Cavity Industrialization

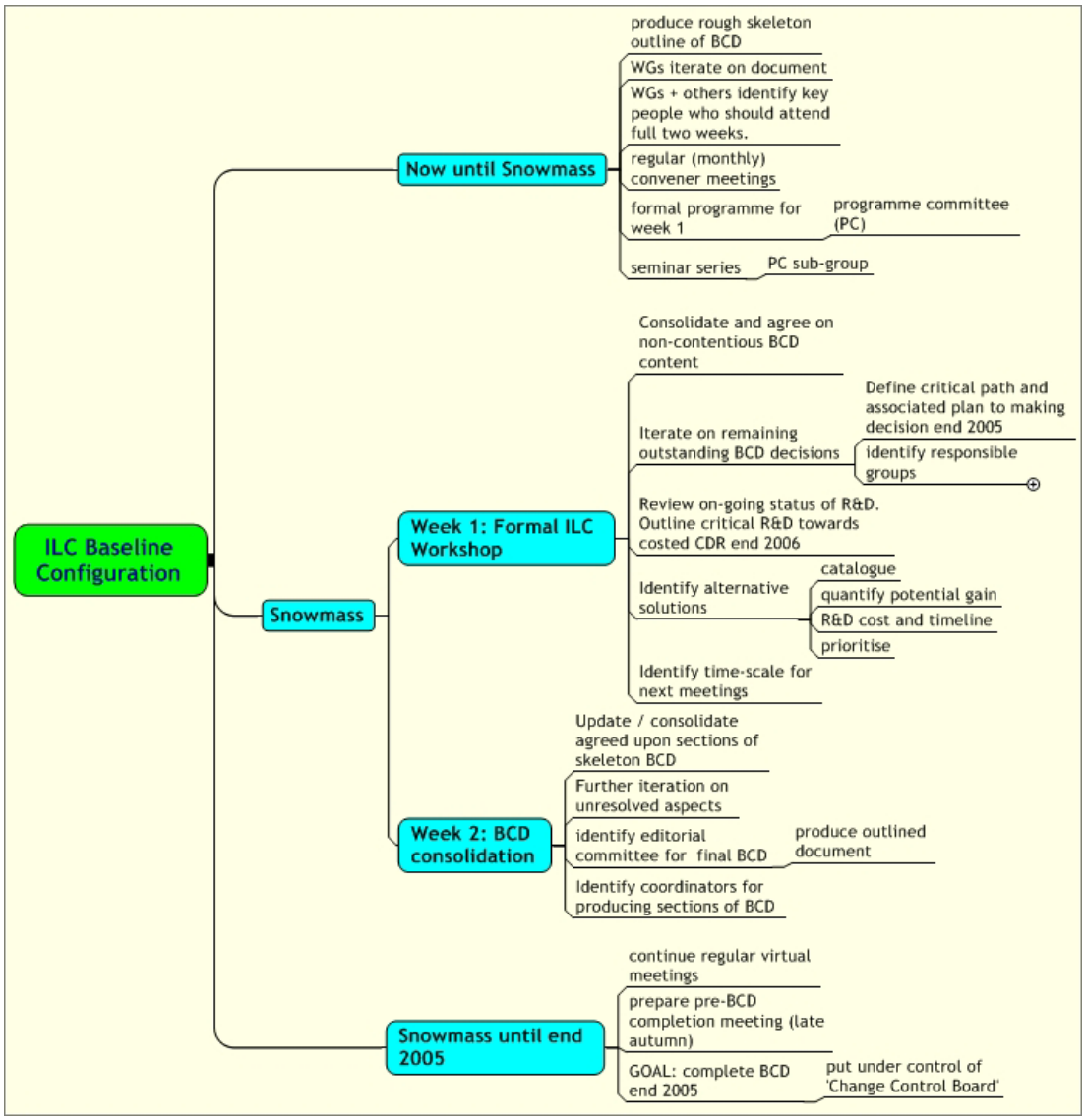

Figure 1: Overall goals and tasks leading to initial release of the ILC Baseline Configuration Document.